Virtual University 2.0

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Abstract: *The paper gives an overview of what Virtual University 2.0 (VU 2.0) is and analyzes the impact of Web 2.0 to e-Learning. Some challenges before VU 2.0 are discussed. The basic differences between Virtual University 1.0 and Virtual University 2.0 are analyzed and some weaknesses of existing Virtual University model are pointed out. The paper also discusses the new student generations and the new methods of learning. Good practices of next generation Virtual universities are presented.*

Key words: *Virtual University, Web 2.0, E-learning 2.0, Virtual Learning Environments, Personal Learning Environment, Social Software.*

INTRODUCTION

Web 2.0 and e-learning 2.0 [7] concepts require an advance development approach and have placed significant pressures on higher education to become more productive. The Virtual University would also not remain untouched. Now we should think for implementation of Virtual University 2.0 concept rather than sticking with Virtual University 1.0 model. Today's knowledge is being delivered outside the Virtual University and access to that knowledge is becoming free. A new generation of virtual universities with innovative structure to compete are needed nowadays. But in which direction virtual universities need to change and how can this be done? What will be the role of Virtual University 2.0 (VU 2.0) in a Web 2.0 world?

CHALLENGES BEFORE VIRTUAL UNIVERSITY 2.0

Some of the top jobs that will be in demand in the future did not exist today. So VU 2.0 is challenged to prepare students for jobs that don't exist yet using technologies that haven't been invented yet. VU 2.0 is intended to provide students with complex understanding and problem solving skills in different technical subjects to allow them to be successful citizens in future digital society.

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The use of Web 2.0 technologies in VU 2.0 change the paradigm of learning: from a top-down VU 1.0 model focused to the teacher to a networked approach where teachers should change their roles to become facilitators of the learning process. The change in learning paradigms of Virtual University 2.0 is presented on Fig.1.
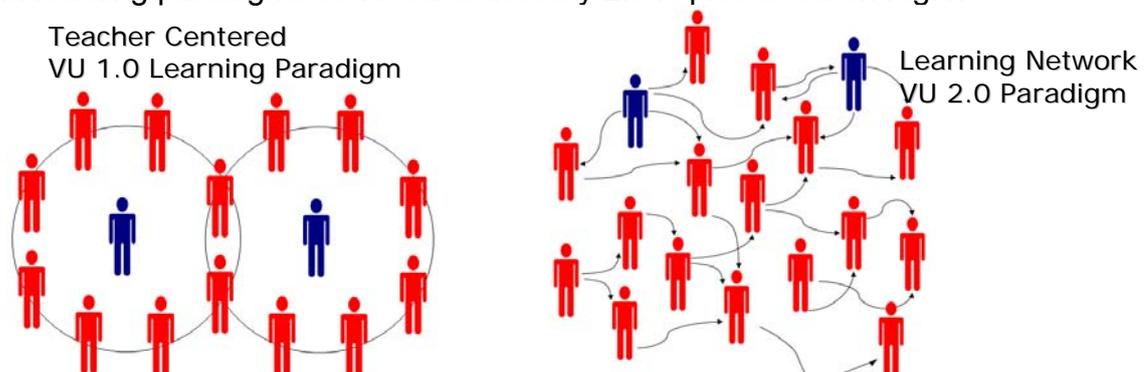

Fig.1. Learning Paradigm of Virtual University 2.0

Learning by doing, collaborative and active learning are essential approaches in Learning Network VU 2.0 Paradigm.

WHAT IS VIRTUAL UNIVERSITY 2.0?

Virtual University 2.0 is a new concept of knowledge management that will affect future virtual education. VU 2.0 is a term describing the impact of e-Learning 2.0 to higher education from a teaching and research perspective. VU 2.0 focuses to: increasing motivation by cooperation + competition, innovation, creativity and entrepreneurship.

WHAT'S WRONG WITH THE EXISTING VU MODEL?

Most Virtual Universities 1.0 were built and designed to function effectively in a single geographic location to a specific group of people. As the world moves toward a global economy and information can be accessed from anywhere in the world, universities need to think more critically about how they want to teach future students in the new digital age, and how they can use WEB 2.0 services in their training process.

VU 1.0 vs VU 2.0

VU 1.0 maintains systems designed to control student's access to learning resources by using software solutions like Managed Learning Environment (MLE).

VU 2.0 is allowing students to make their own decisions about information access, creating learning content and encouraging the use of WEB 2.0 services.

To get sense of VU 2.0 we will start with analytical comparison of VU 1.0 and VU 2.0. In Table 1 are given the basic differences between VU 1.0 and VU 2.0.

Table 1. VU 1.0 vs. VU 2.0

VU 1.0		VU 2.0
Hierarchiral / Centralized VU model	↔	Distributed shared-services VU model
Closed network infrastructure	↔	Open network infrastructure
"push knowledge method"	↔	"pull knowledge method"
Old Digital Content order	↔	New digital (dis)order
Copyright learning content	↔	Open access and content remix
E-learning platforms	↔	Social read-write platforms
Expensive e-learning platforms	↔	Open source, 0 cost solutions
Students as consumers	↔	Students as creators
Virtual web site portal	↔	Personal aggregators
Teacher Centered Model	↔	Learner Centered Model
Teacher generated learning content	↔	Student generated learning content
Knowledge management	↔	Community knowledge
Individual work	↔	Co-operative team work
Expository learning	↔	Discovery learning
Online chat classrooms	↔	Three-dimensional virtual world
Linear slow progress	↔	Exponential quick network progress

CHARACTERISTICS OF VU 2.0

✓ *VU 2.0 is driven by people* – VU 2.0 is about people creating content and sharing their ideas in order to create further information;

✓ *Users Add Value* – VU 2.0 allows users to contribute in increasing the value of existing learning content by providing new content;

✓ *VU 2.0 delivers a new way of access and interaction with knowledge* – Students are encouraged to learn continuously and build a leaning network. At the moment students are using many different mechanisms for collaborative learning: Wikipedia, Facebook, Notemesh, Flickr, etc;

✓ *VU 2.0 students shift from consumers to active users* – participating as curators and learning content creators;

✓ *VU 2.0 is a perpetual beta* – VU 2.0 releases new learning tools getting feedback from users;

✓ *VU 2.0 data is a competitive advantage* – Everybody can contributes as a VU 2.0 students and work in progress research;

✓ *VU 2.0 provide open access delivery system*: VU 2.0 encourages students to deliver content and share with all;

✓ *VU 2.0 services are beyond single devices* – VU 2.0 usage is device independent;

✓ *Collaborative culture* – VU 2.0 adopts creative commons where reuse is permitted and encouraged.

In VU 2.0 not only learning models are changed – content organization models are also challenged. VU 2.0 learning content is organized as: dynamic (real-time content, such as e-mails, instant messages, or conference calls); and moderated (social writing platforms or wikis that capture information where we did well and how we did it). Learners in VU 2.0 will assemble relevant material on their real-time needs, rather than a structured situation where someone else dictates what kind of learning they need. Teachers will not dictate structured learning. They will sort through all kinds of different learning resources and guide students in the right direction for their particular learning need. The training professional will give them the resources and let them chat, collaborate, share, and discover what they need to learn.

VU 2.0 is going to teach in a way similar to TV networks, where the control of customers (students) is not possible. There will be no more scheduling courses or agendas. VU 2.0 learning institutions should be customer-oriented, just-in-time and flexible. The VUs that understand this will be the ones that survive the longest.

FUTURE STUDENTS GENERATIONS

First of all we have to answer the question: Do we really have students who can use VU 2.0 technologies to enhance their learning?

"Our students have changed radically. Today's student are no longer the people our educational system was designed to teach" [9].

Today's students are not only digital natives – they are also digital learners [8]. They prefer to meet with their teachers and colleagues one day a week, and then to use virtual simulations and surf in WEB the rest of the week to complete coursework.

Today's teenagers are "Google Generation Students" – they are experts at using WEB, but they have problems when it comes to understanding the results displayed on screen. Although today's digital natives are familiar with advanced technology, they still don't know everything about using the information they find and they will need us to guide them through the masses of information available to them. This means that teachers still have a key role to play in VU 2.0 learning.

To find out what future student's generations will look like, a short analysis of the YouTube clip "A Vision of Students Today" will be presented [2]. The Clip is created by students in cultural anthropology and faculty staff at the Kansas State University. It starts with a student eye view of an empty lecture hall, before presenting the findings of a survey into the student experience through placards held up by individual students. The clip is created from an online text edited 367 times by 200 students, who are surveyed. The clip demonstrates how useful WEB 2.0 can be for universities in market research. At the same time, it is an example of how effective WEB 2.0 technologies are in projects involving collaboration. The survey shows that on average respondents expected to read eight books, 2,300 web pages, and 1,281 Facebook profiles that semester. Students would write 42 pages for class, but they would write another 500 pages of emails. Some interesting student's responses will be summarized:

- ✓ Students buy hundred dollars textbooks that they never open;
- ✓ Students bring their laptops to class, but they do not work on class stuff;
- ✓ When students graduate they will have probably a job that doesn't exist today;
- ✓ Students complete readings that are not relevant to their life;
- ✓ 18% of the teachers know students names;
- ✓ Future class size will be more than 100 students.

Digital learners are significantly busier than we were when we were students. Today's students: get 7 hours of sleep each night; spent 1,5 hours watching TV each night; spent 3,5 hours a day online; listen to music 2,5 hours a day; spent 2 hours on their cell phones; spent 3 hours in class; 2 hours eating; work 2 hours every day; 3 hours studying - > Total 26,5 per day.

Other surveys show that: 35% of all teens blog; 54% post photos online; 19% post videos; 39% share their own artistic creations online; 26% remix content; 27% maintain web pages; 28% have created their own blogs.

VU 2.0 learning depends on an interaction between teachers who are expert in the academic use of the technologies for learning and students who are definitely experts enough to use VU 2.0 learning tools.

WEB 2.0 LEARNING TOOLS IN VU 2.0

Some Virtual universities have started using WEB 2.0 services in their training process: lecturers are allowing students' access to podcasts and videos of their lectures; others are encouraging students to collaborate through wikis and using RSS feeds to organise their own work; many are now giving feedback on essays using Skype or social sites; others conduct seminars on Second Life Virtual Worlds.

WEB 2.0 learning tools offer lots of challenges. Sites like Facebook, Wikipedia and MySpace are going to get bigger: 200 million users on MySpace, 53 million on Facebook, 75 million blogs, 5 million articles in Wikipedia, 100 million videos seen on YouTube every day and 2 billion pictures on Flickr. So how will VU 2.0 use them in the future? One of the most important advantages of this is that most of WEB 2.0 services can be setup or use for free.

Social Writing Platforms: As with most WEB 2.0 tools the key concepts here are collaboration, sharing and forming communities. Social Software, for example, can be used by VU 2.0 for allowing students to join groups, offering them a unique way of communication and getting extremely valuable feedback. VU 2.0 learning content can be partially generated by users. Students can have facebook groups dedicated to specific classes – with discussions on some topics, what additional resources and literature can be used and etc. Social Writing Platforms are useful tools for a variety of university needs. These services offer an alternative platform for peer editing and supporting asynchronous writing for distributed members.

Wikis are very popular today. In VU 2.0 context they can give students an easy way of creating WEB content, without having any skills in WEB programming. Students can use wikis for knowledge management and as a knowledge repository. There is criticism about the use of Wikipedia for academic purposes, because of the misunderstanding of the power of community. In Wikipedia anyone can add or change content and therefore the critics think it is not guaranteed to be a perfect source of objective information. VU 2.0 students do not need to cite Wikipedia, they can use it for example to get a quick overview of a topic related to the one they are studying or to quickly determine the scope of a topic and what other sources are important. Often academic texts only talk about a simple aspect of a topic. Wikipedia entries are usually developed by a community of people with different interests, so a broader treatment and a list of external links will help to gain a broader perspective on a topic.

Social bookmarking can be used as a location to store links and support pages for VU 2.0 lessons: building a source of materials for students, adding commentary, making a shared space for students to edit or add their own recommendations. The ability to create multi-authored bookmark pages can be useful for team work in VU 2.0.

RSS feeds are very popular now. Students sign up to something interesting that further is automatically feed into a personal page so they don't have to keep checking multiple sites. It's an easy way for students to be kept informed, without being bombarded.

Second Life is a three-dimensional virtual world. There are more than 10 million users of Second Life. Hundreds of leading universities and school systems around the world use Second Life as a vibrant part of their educational programs. Gartner Group [6] is predicting 80% of active internet users will have a 'second life' by 2011. Second Life is used by many universities as a promotional tool and to teach real classes to students. Today's students do not prefer to use an online environment like a chat room to meet. Second Life engages distance learners in a way that email, instant messaging and chatrooms do not quite manage. Students can use movements as well as labels to get other's attention, and a user can take all the class with him (her) to another area of the cyberworld. The user can very clearly see who is contributing to the discussions and paying attention, and who is not. It can bring distance learners together in what feels like a closer physical relationship than other online technologies. Second Life can give them a possibility to attend classes in a world where the students can fly, change body types, appearance, age, gender and color. For example at university lectures you can be a slim blonde in your 20s by the name of GalaZorca. At home, you are a little less slim, a little less blonde, aged 30 and called Galina Ivanova. In SecondLife we start to talk about cyberculture or the way the internet is transforming our culture without actively participating in it (Fig.2).

Fig.2. SecondLife

*PodCast - W*eb lectures and podcasts have become an integral part of universities' e-learning portfolios. They can be created by simply recording a lecture and publishing it into special client software applications known as podcatchers, for example iTunes. More and more students ask the lessons to be available online. Lecturers can develop new didactic concepts and produce podcasts including not only the lectures, but also

additional materials. Students can produce audio-visual content as user-generated e-learning objects. YouTube can be used also as a platform for VU 2.0 video lessons.

PLE - Concepts like "PLE" are going to evolve in VU 2.0 [1]. Students will be able to effectively manage their own online identities, resources and their relationships with more than one VU. They will be able to select what kind of relationship they want to have with each VU. Perhaps they can take their first year mathematics courses from VU X, chemistry from VU Y, physics from VU Z, and etc. VU 2.0 is going to become a place for students to come together, to collaborate and work on common research. Teaching and learning activities will be supported by VU, but they will be managed by the students in PLE.

EXAMPLES FOR GOOD PRACTICE

The Universities provide some experiences in use of new WEB 2.0 learning technologies [12]. We will cite only a few: Digital Ethnography at Kansas State University [3], Future University, Podcasting University, Ohio University Second Life Campus, MIT Open Course Ware, Stanford on iTunes U, University of Warwick, Universitat Oberta de Catalunya, BipApp at University of Wisconsin-Madison [10] and etc.

The Virtual University of Edinburgh (VUE) [11] is a virtual educational and research institute bringing together all those interested in the use of virtual worlds for teaching, research and outreach related to the University of Edinburgh. VUE has been involved with Second Life since 2004 when the first class of students participated in "Campus Second Life" program. Since this time, VUE students have led a variety of learning experiences in Second Life, including: conducting "open houses" for The Second Life Planetarium, a virtual facility created by Professor Crider for demonstrating the motions of the stars. Approximately 30 students wrote astronomy shows for the planetarium in Fall of 2006.

University of Houston design economics course of real live modeling of business practices in a virtual world where designers can try their design and entrepreneurial skills against an entire market rather than the code of simulation software. SecondLife provides a real time simulation with real time economy and fickle customers.

Digital Worlds Institute of University of Florida [4] exists to nurture leading edge research and education between the arts, engineering and the sciences, utilizing advanced media systems and digital culture. Through the use of interactive tools and technologies, the Institute promotes transdisciplinary creativity across classrooms, continents and cultures.

Xavier University Web 2.0 strategy [5] is a project that brings into focus the WEB services as a way of meeting future student needs. Xavier moved the WEB site from a very static and non-student focused one, to a more personalised and active place, where the students published pictures and videos showing what they thought good about Xavier and the incoming students graded these to sort out the best which were then used on the WEB site. Students were also encouraged to build their own Facebook-like pages to allow them to connect with other students having similar interests. This approach helps to build points of engagement and connects prospective and current students.

CONCLUSIONS AND FUTURE WORK

The adoption of VU 2.0 is a complex process. There are some problems that have to be discussed in the future: How to manage intellectual property in VU 2.0? What about the ownership? How to compete being open? How to manage human resources?

Ownership: The University owns its research and teaching content. In VU 2.0 the idea is to share with all, so who owns the copyright to the learning content? Copyright and intellectual property issues involved in WEB 2.0 are not yet entirely clear.

Trust: VU 2.0 will change the way people consume information. All forms of information are now available on Internet, this information is getting organised by different people: students, institutions, experts and etc. How to trust any publications online? What about the quality of research and research results?

Issue of control: VU 2.0 is challenging copyright because of the open source paradigm that allows open access and creation of remix contents. Some questions about "unsanctioned usage", need of policies and usage guidelines have to be discussed.

VU 2.0 institutions should be active and continually growing and updated, rather than a static VU WEB page. VU have to change their content creation and content distribution model to remain relevant in a WEB 2.0 World.

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